US ARMY RDECOM

U.S. Army
Edgewood Chemical Biological Center

Partnering with Industry

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Michael Abaie, Director of Engineering, ECBC
8 Dec 2015

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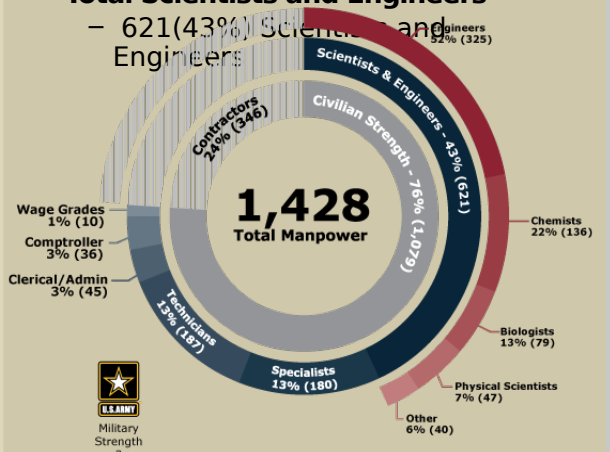
Edgewood Chemical Biological Center

Specialized Workforce

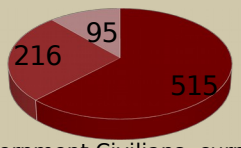
Total Manpower: 1,428*

Expertise Across Lifecycle

- **Deployable Employees:**
  - 250 field-deployable scientists, engineers, technicians and operators
- **Staff in Personnel Reliability Program (PRP)**
  - 454 staff, 63 dual BPRP and CPRP
- **Total Scientists and Engineers**
  - 621(43%) Scientists and Engineers



Advanced Degrees



*Government Civilians, current as of 1Q FY15

Unique Infrastructure

Chemical Transfer Facility

Only U.S.-declared Single Small Scale Facility under the Chemical Weapons Convention.

McNamara Life Sciences Research Facility

Uniquely designed for cutting edge research, toxicological testing, genomics and proteomics, accompanied by a BSL-3 laboratory environment.

Advanced Chemistry Laboratory

Features advanced toxic agent laboratories, environmental chambers and secure work spaces for classified material.

1.22M ft² Laboratory Space
64 BSL-2 and 2 BSL-3 Laboratories
317 Chemical Surety Hoods
3 Explosive Test Chambers
Several Outdoor Ranges
Forensic Analytical Capabilities

Directorates/Capabilities

Research and Technology

Science and
Emerging

Chemistry and
ces

Engineering

- CBRNE Materiel Acquisition
- CBRNE Analysis and Testing

Program Integration

- CB Agent Handling and Surety
- CB Munitions and Field Operations

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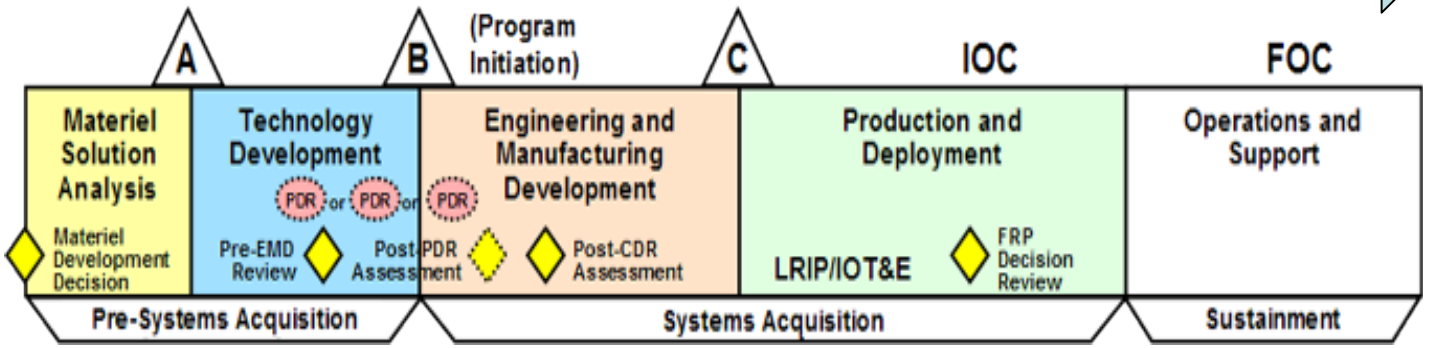
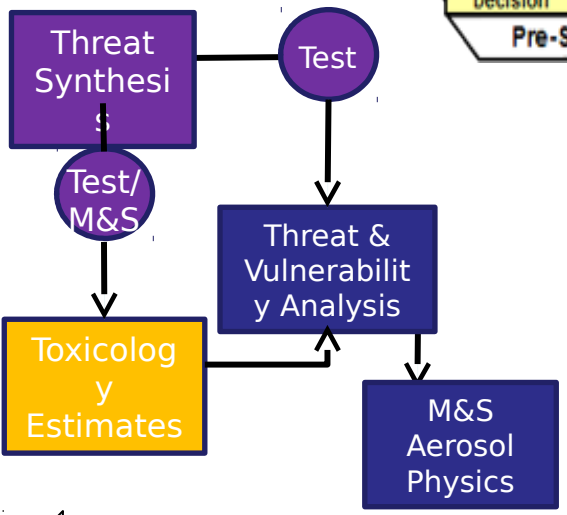
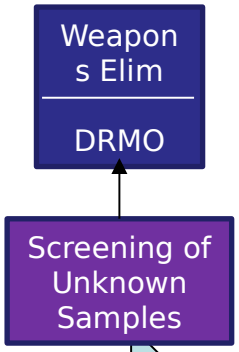
ECBC Provides Lifecycle Support

SAFTEY---SECURITY---SURETY---INFRASTRUCTURE







SYSTEM ENGINEERING---LIFECYCLE MANAGEMENT---TRAINING & REACHBACK

ECBC's core competencies support solutions throughout the acquisition lifecycle from cradle to grave.

Rapid Prototyping

Capabilities

- Additive Manufacturing
- Advanced Conventional Manufacturing
- 3D Data Capture Capability

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Rapid Success

Collaborating directly with the Joint IED Defeat Organization (JIEDDO), Product Manager Counter Explosive Hazard (PdM CEH), Program Executive Office for Simulation, Training and Instrumentation (PEO STRI), and Maneuver Support Center of Excellence (MSCoE).

- Mechanical, Electrical, System, and Software Engineering.
- The first prototype was delivered in 3 months.
- Prototype is transitioning to Program of Record.
- Simulation Software being used in Virtual Clearance Training Suite (VCTS)
- Mobile App being used for Interactive Multi-media Instruction (IMI)

VCTS

PROTOTYPE PLATFORM

SIMULATION SOFTWARE

MOBILE AP

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Success Working with Industry

Joint Service Aircrew Mask (JSAM)

- Revolutionary mask design experienced issues during developmental testing.
  - Resulted in millions of dollars of sunken cost in tooling.
  - Additional redesign using traditional manufacturing process could added cost and schedule.

- ECBC collaborated with developer to use rapid prototype-based test assets for mask redesign.
  - Streamlined the design-build-test-redesign cycle.
  - Saved millions of dollars and months of schedule.

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Technology Transfer

TAC BIO

- Deep UV LED technology developed by DARPA
- ECBC R&T- developed the methods to use the LED to detect biologic contaminants
- ECBC Engineering- designed the enclosure for manufacturability and maintainability
- The design was transitioned through patent license agreement to industry for production

TAC BIO
The TAC BIO is a lightweight, low cost, low power biological agent aerosol detector. Developed within 2 years between Research & Technology and Engineering Directorates.
RDECOM

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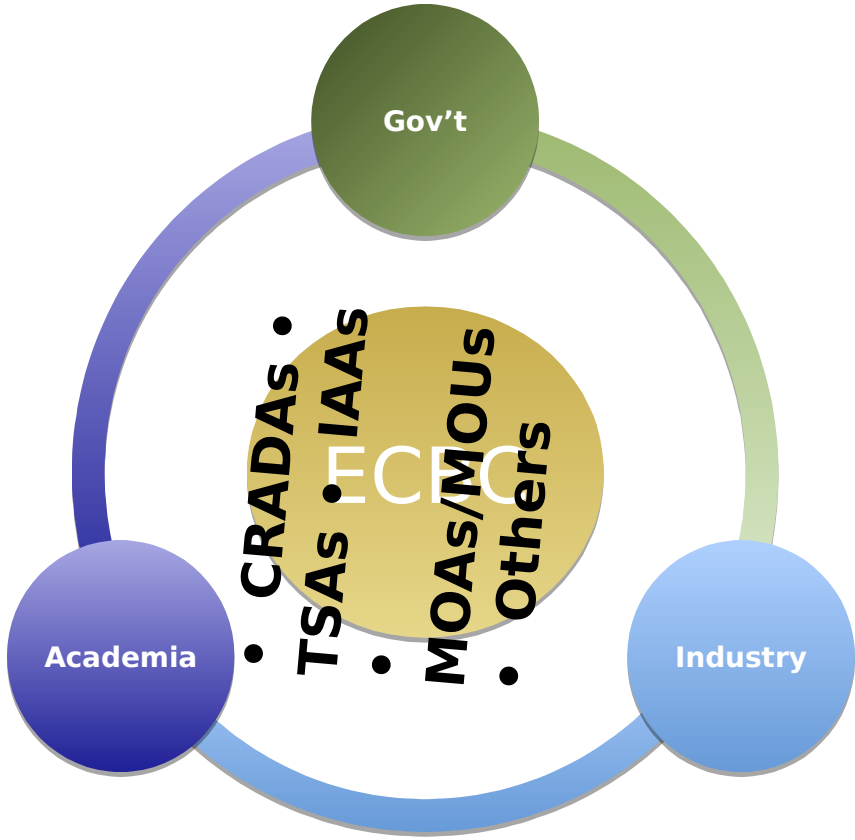
Working with ECBC

- Enables ECBC to accomplish technology transition objectives for the warfighter while benefiting U.S. industry

- Allows R&D collaborations, product development and testing with industry and academia

- Enables industry, academia and other organizations to leverage ECBC's unique assets: intellectual property portfolio, S&E expertise, in



Mechanisms include:
- Cooperative Research & Development Agreements (CRADAs)
- Technology Support Agreements (TSAs)
- Patent License Agreements (PLAs)
- Other Agreements (IAAs, MOAs, MOUs)

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